

ABSTRACT

When a network pages the temporary user mobile identifier of a mobile station, the mobile station sends a response to the network. Next, the network checks the authenticity of the user using a ciphering key, corresponding to the temporary user mobile identifier and a random number. If the temporary user mobile identifier is authenticated, a normal incoming call acceptance procedure is executed. If the mobile station is authenticated although the temporary user mobile identifier is wrong, the network reassigns a new temporary user mobile identifier to the mobile station and stops the current communication. In communication, the network and the mobile station mutually notify encipherment-onset time and negotiate about encipherment manner with each other. In addition, diversity handover is commenced upon a call attempt. Furthermore, if a branch replacement is necessary, the current branch is replaced by new branches capable of executing the diversity handover. Additionally, when a new call occurs to or from the mobile station capable of treating a plurality of calls simultaneously, the mobile station uses the same branch structure and the same communication frequency band for all of calls. Additionally, when a new call occurs to or from the mobile station capable of treating a plurality of calls simultaneously, a branch structure and a communication frequency band, which can continue all of the calls, are selected and used. Therefore, the mobile communications system is suitable for transmission of various sorts of data in accordance with the development of multimedia.



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(57) Abstract

When a network performs paging by using a temporary mobile user identifier (TMUI), the corresponding mobile station (MS) sends a response. After this, the network performs authentication by using an authentication key corresponding to the TMUI and random numbers. When the use is proved to the unauthorized as a result of the authentication, the network sends a request that the user should send an individual mobile user identifier (IMUI). Then, the network performs authentication by using an authentication key corresponding to the IMUI and random numbers (S8-S10). When the user is identified as an authorized user, the TMUI is allocated again. By negotiation between the MS and the network side, the object to be hidden and the hiding method for controlling the hiding start timing included in the information to be transmitted are determined. When a call occurs, a diversity handover is started. When a branch switching is needed at an MS, the branch is switched over to a branch through which diversity handover is possible. When another call takes place at an MS that can deal with a plurality of calls simultaneously, the branch configurations and communication frequency bands are made the same for all the calls. When another call occurs at an MS that can deal with a plurality of calls simultaneously, branch configurations and communication frequency bands for which all of the calls are maintained are selected, and transition to them is performed. Thus, a mobile communication system can be built which is suited for transmitting various kinds of data, thereby being adapted to multimedia communication.

